

WE CLAIM:

1. A tire vulcanizing equipment comprising:

a vulcanizing station having placing parts for placing tire mold assemblies movable in closed state and a housing shelf vertically having plural stages of the placing parts;

an opening and closing station having a placing part for placing the tire mold assembly, an opening and closing device for opening and closing the tire mold assembly placed on this placing part, a carrying-out device for carrying a vulcanized tire from the tire mold assembly and a carrying-in device for carrying an unvulcanized tire to the tire mold assembly; and

a transfer station for transferring the tire mold assembly between an optional stage of the placing parts of the housing shelf and the placing part of the opening and closing station by the rising and falling action along the housing shelf of the vulcanizing station.

2. A tire vulcanizing equipment comprising:

a vulcanizing station having a housing shelf vertically having plural stages of placing parts for placing tire mold assemblies movable in closed state, which have pipings for supplying and discharging a vulcanizing/heating medium to the tire mold assemblies placed thereon;

an opening and closing station having a placing part for placing the tire mold assembly, an opening and closing device for opening and closing the tire mold assembly placed on the placing part, a carrying-out device for carrying a vulcanized tire from the tire mold assembly and a carrying-in device for carrying a unvulcanized tire to the tire mold assembly, the opening and closing station being connected to a carrying-out line of vulcanized tires

to the following step and a carrying-in line of unvulcanized tires; and

a transfer station for transferring the tire mold assembly between the placing part of an optional stage of the housing shelf and the placing part of the opening and closing station by the rising and falling action along the housing shelf of the vulcanizing station.

3. A tire vulcanizing equipment according to claim 1 further comprising:

an auxiliary station having a placing part for placing the tire mold assembly and an opening and closing device for opening and closing the tire mold assembly placed on this placing part.

4. A tire vulcanizing equipment according to claim 1, wherein the opening and closing station is connected to the carrying-out line of vulcanized tires to the following step and the carrying-in line of unvulcanized tires.

5. A tire vulcanizing equipment according to claim 3, wherein the auxiliary station has a carrying-out device for carrying vulcanized tires from the tire mold assembly and a carrying-in device for carrying unvulcanized tires to the tire mold assembly.

6. A tire vulcanizing equipment according to claim 3, wherein the auxiliary station is connected to the carrying-out line of vulcanized tires to the following step and the carrying-in line of unvulcanized tires.

7. A tire vulcanizing equipment according to claim 3, wherein a mold replacement/maintenance base is attached to the auxiliary station.

8. ~~A tire vulcanizing equipment according to claim 1, wherein~~

the transfer station has a rising and falling transfer device comprising a first delivering mechanism capable of delivering the tire mold assembly and switching the guide direction of the tire mold assembly to an optional placing part direction, a placing part for placing the tire mold assembly received by the first delivering mechanism, and a lifting mechanism for raising and lowering the first delivering mechanism and the placing part along the housing shelf.

9. A tire vulcanizing equipment according to claim 8, wherein

the transfer station has a rotating transfer device comprising a second delivering mechanism for delivering the tire mold assembly, a placing part for placing the tire mold assembly received by the second delivering mechanism, and a turntable rotatable so as to set the guide direction of the tire mold assembly by the second delivering mechanism to an optional placing part direction.

10. A tire vulcanizing equipment according to claim 8, wherein

a plurality of transfer stations is provided, so that the transfer of the tire mold assembly is performed between the respective transfer stations.

11. A tire vulcanizing equipment according to claim 1, wherein

the vulcanizing station has a plurality of circularly arranged placing parts, and the transfer station is arranged in the center of the same circumference as the circularly arranged placing parts, so that the transfer of the tire mold assembly between the circularly arranged placing part and the placing part of the opening and closing station is performed by the rotating action of the transfer station.

12. A tire vulcanizing equipment according to claim 11, wherein

an auxiliary station having a placing part for placing the tire mold assembly and an opening and closing device for opening and closing the tire mold assembly placed on the placing part is further provided on the same circumference, so that the transfer station performs the transfer of the tire mold assembly also between the placing part of the auxiliary station and the placing part of the vulcanizing station.

13. ~~A tire vulcanizing equipment according to claim 11, wherein~~

two or more circular station groups having the above-described circular arrangement are arranged in a row, and these circular station groups are mutually connected through guide rails allowing the movement of the tire mold assembly between the both.

14. A tire vulcanizing equipment according to claim 11, wherein

the transfer station comprises a delivering mechanism for delivering the tire mold assembly and a turntable/rotatable so as to set the guide direction of the tire mold assembly by the delivering mechanism to the direction of an optional circularly arranged placing part.

15. A tire vulcanizing equipment comprising:

a vulcanizing station having a housing shelf having plural stages of placing parts for placing tire mold assemblies movable in closed state, which have pipings for supplying and discharging a vulcanizing/heating medium to the tire mold assemblies placed thereon;

an opening and closing station having a placing part for placing the tire mold assembly, an opening and closing device for opening and closing the tire mold assembly placed on this placing part, a carrying-out device for

carrying a vulcanized tire from the tire mold assembly, and a carrying-in device for carrying a unvulcanized tire to the tire mold assembly, the opening and closing station being connected to a carrying-out line of vulcanized tire to the following step and a carrying-in line of unvulcanized tire; and

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a transfer station for performing the transfer of the tire mold assembly between an optional stage of the placing parts of the housing shelf and the placing part of the opening and closing station by the rising and falling action along the housing shelf of the vulcanizing station.

16. A tire vulcanizing equipment comprising:

a vulcanizing station having a plurality of circumferentially arranged mold bases for placing tire mold assemblies movable in closed state, which have pipings for supplying and discharging a vulcanizing/heating medium to the tire mold assemblies placed thereon;

an opening and closing station having a mold base arranged on the same circumference, an opening and closing device for opening and closing the tire mold assembly placed on the mold base, a carrying-out device for carrying vulcanized tires from the tire mold assembly, and a carrying-in device for carrying unvulcanized tires to the tire mold assembly, the opening and closing station being connected to a carrying-out line of vulcanized tires to the following step and a carrying-in line of unvulcanized tires; and

a transfer station arranged in the center of the same circumference to perform the transfer of the tire mold assembly between the mold base of the vulcanizing station and the mold base of the opening and closing station which are arranged on the same circumference by the rotating action.

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